



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/131,693

08/10/1998

HOON-SOON CHOI

1317.1043/MO

8185

21171

7590

08/12/2002

STAAS & HALSEY LLP
700 11TH STREET, NW
SUITE 500
WASHINGTON, DC 20001

EXAMINER

CHIEU, PO LIN

ART UNIT

PAPER NUMBER

2615

DATE MAILED: 08/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/131,693

Applicant(s)

CHOI, HOON-SOON

Examiner

Polin Chieu

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 6/4/02 have been fully considered but they are not persuasive. Regarding the arguments directed towards the PLL, Jeong et al shown in figure 2 that Sf1 and Sf2 are generated by the synchronization detector (220) for detecting synchronization patterns (col. 1, line 35 – col. 2, line 16) and to control the rotation of the disc (col. 4, lines 4-13). It is clear from figures 1 and 2 and the specifications that Sf1 and Sf2 are pulse streams from the DVD or CD. The examiner recognizes that the demodulators (or preprocessors in claims 25 and 31) and ECC are separated in Jeong et al. However, the claims fail to recite a single demodulator performing EFM and ESM; and a single ECC. A typographical error was made referring to "a single preprocessor" in claim 20; and will be corrected to read "a signal preprocessor" in the following action.
2. Applicant's arguments with respect to claim 20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1, 4, 7, 11, 12, 14-15, and 25-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Jeong et al (6,233,394).

Regarding claims 1, 4, 7, 11-12, 14, and 15, Jeong et al (6,233,394) discloses a PLL receiving two pulse streams to generate a PLL clocks (300) in figure 1 (col. 2, lines 50-67 and col. 3, lines 1-39); a frame/ID sync detector to generate a symbol clock (240); a demodulator performing EFM+ in a DVD mode (212) and EFM in a CD mode (214); a external memory to store the demodulated data from the demodulator (280); a ECC (230, 235) to error correct according to a predetermined code length and error correction range and storing the data back into the memory (col. 4, lines 25-45); a descrambler (240) that descrambles the error corrected data in the memory (col. 4, lines 40-59) for use with an audio/video decoder (600, fig. 1); and a CD audio processor (290).

Regarding claims 25-29 and 31-35, Jeong et al (6,233,394) discloses a signal pre-processor generating a clock from a pulse stream read from one of the DVD and the CD and performing demodulation according to the discrimination information (col. 3, lines 21-67 and col. 4, lines 1-3); a memory unit (280) storing in a corresponding format according to discrimination information (col. 4, lines 25-40); and a data processor and

converter (audio-convert or data convert) processing the data stored in the memory unit using a error correcting method dependent on a code length and a correcting range (col. 4, lines 25-40).

Regarding claims 30 and 36, Jeong et al (6,233,394) discloses a memory (280) and a memory controller (270).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong et al (6,233,394) in view of Chang et al (6,119,262).

Regarding claims 2, 3, and 10, Jeong et al (6,233,394) discloses a predetermined code length and error correction range in the DVD mode PI(182,172) and PO(208,192). However, Jeong et al (6,233,394) does not disclose a predetermined code length and error correction range for a CD mode; a syndrome generator; a modified syndrome calculator; a modified Euclidean algorithm; and Chien search engine.

Chang et al teaches a predetermined code length C1(32,28) and a error correction range C2(38,24) (col. 8, lines 55-67); a syndrome generator (20); a erasure constant generator to receive an erasure flag to generate an erasure constant (fig. 1b);

a modified syndrome calculator to receive the syndrome polynomial and the erasure constant to calculate a modified syndrome and generate a Forney syndrome polynomial (col. 5, lines 5-10); a modified Euclidean algorithm to process the Forney syndrome polynomial and the erasure polynomial based on a modified Euclidean algorithm, to generate an errata locator polynomial and an errata evaluator polynomial (col. 5-6); and a Chien search and error correction circuit to correct errors of the demodulated data stored in the memory according to the errata locator polynomial and the errata evaluator polynomial (24).

Since Jeong et al (6,233,394) does not disclose a specific method of error correction, it would have been highly desirable to use any known method of error correction.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the method described in detail by Chang et al.

7. Claims 5-6, 8, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong et al (6,233,394) in view of Jeong (5,988,872).

Regarding claims 5-6, 8, and 13, Jeong et al (6,233,394) discloses a first memory map including a plurality of blocks with a fixed number of bytes. However, Jeong et al (6,233,394) does not disclose a second memory map for a CD mode; the plurality of blocks is 13; the first fixed number of bytes is 32.25 Kbytes; the plurality of frames is 256; and the second fixed number of bytes is 32 bytes.

Jeong '872 teaches a second memory map in fig. 4. A plurality of blocks and frames, and a first and second fixed number of bytes are not disclosed; however, these

factors are dependent on the processing and the size of the memory. Further, the specifications have provided no predication why these specific numbers would be better than any other. Therefore, it would have been obvious to have the plurality of blocks at 13, the first fixed number of bytes at 32.25 bytes, the plurality of frames at 256, and the second fixed number of bytes at 32.

It would have been highly desirable to have a first and second memory map so that processing DVD data and CD data could be performed. For example, in the processing of video data (or DVD mode), it common to group data into 8x8 pixel blocks. However, audio data (or CD data) does not process into 8x8 pixel blocks because audio data does not have pixels. Therefore, it is clear that the groupings of audio and video would require different memory maps when a single memory is used.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to have a first and second memory map in the device of Jeong et al (6,233,394).

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong et al (6,233,394) in view of Jeong '872 and Shim (5,970,208).

Jeong et al (6,233,394) does not disclose a VBR control margin.

Shim teaches a VBR control margin to interface the error corrected data with an A/V decoder (col. 5, lines 1-15).

It would have been highly desirable to have VBR control margin to control the flow of data.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to have a VBR control margin in the device of Jeong et al (6,233,394).

9. Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong et al (6,233,394) and Chang et al.

Regarding claim 16, Jeong et al (6,233,394) discloses a combined DVD and CD processor (200) with a demodulator (212, 214) to demodulate the first and second pulse streams in a DVD mode and a CD mode; and a single external memory (280). However, Jeong et al (6,223,394) does not disclose a single ECC.

Chang et al teaches a single ECC circuit (Fig. 1b) that processes both DVD and CD data (col. 8, lines 55-67 and col. 9, lines 1-2).

It would have been highly desirable to have a single ECC to simplify the circuit and make the device cheaper.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to have a single ECC in Jeong et al (6,223,394).

The limitations of claims 17-19 were discussed in the art rejection of claims 1-2. Please refer to the art rejections of claims 1-2.

10. Claims 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong et al in view of Kamatani (5,587,981).

Regarding claims 20-23, Jeong et al (6,233,394) discloses a signal pre-processor generating a clock from a pulse stream read from one of the DVD and the CD and performing demodulation according to the discrimination information (col. 3, lines 21-67

and col. 4, lines 1-3); a memory unit (280) storing in a corresponding format according to discrimination information (col. 4, lines 25-40); and a data processor and converter (audio-convert or data convert) processing the data stored in the memory unit using a error correcting method dependent on a code length and a correcting range (col. 4, lines 25-40). However, Jeong et al does not disclose that demodulating is performed according to the generated clock as well.

Kamatani teaches demodulating according to a generated clock (col. 2, lines 35-55).

It would have been highly desirable to demodulate according to the generated clock so that the linear velocity can be controlled, thereby allowing different formats (e.g. CD, DVD, MD) to be read properly.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to demodulate according to a generated clock in the device of Jeong et al.

Regarding claim 24, Jeong et al (6,233,394) discloses a memory (280) and a memory controller (270).

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Polin Chieu whose telephone number is (703) 308-6070. The examiner can normally be reached on M-F 8:30 AM-6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew B. Christensen can be reached on (703) 308-9644. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

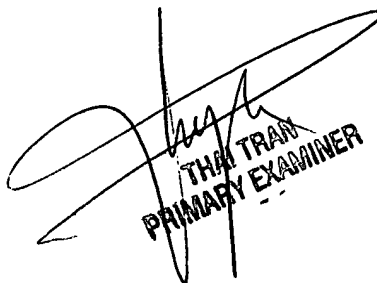
Washington, D.C. 20231

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Art Unit: 2615

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

PC
August 7, 2002



THAI TRAN
PRIMARY EXAMINER